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APPENDIX D: THE PAR INDEX

I. GUIDELINES FOR THE PAR INDEX (PEER ASSESSMENT RATING INDEX)

A. Introduction

The Peer Assessment Rating Index, or PAR Index, is a quantitative, objective method for measuring malocclusion and the efficacy of orthodontic treatment. The PAR Index provides a single score, based on a series of measurements, that represents the degree to which a case deviates from normal alignment and occlusion. The average time to record the PAR Index score is approximately five minutes.

THE FIVE COMPONENTS OF THE PAR INDEX

- Upper and Lower Anterior Segments
- Left and Right Buccal Occlusion
- Overjet
- Overbite
- Centerline

B. Components of the PAR Index

1. Upper and Lower Anterior Segments

Record scores for both upper and lower anterior segments from the mesial contact point of the right cuspid to the mesial contact point of the left cuspid. Record crowding, spacing, and impacted teeth. Contact point displacement equals the shortest distance between contact points of adjacent teeth. The greater the contact point displacement, the greater the score. A tooth is impacted if the space between adjacent tooth is less than or equal to 4mm. Sum the scores for contact displacements, ectopic teeth, and impacted teeth to give the overall score for each anterior segment. **Please Note:** The PAR Index Recording Form contains a section for recording the clinical widths of the maxillary and mandibular right central incisors. This will account for any photographic enlargement on the occlusal photographic views.

Upper and Lower Anterior Segments	
Score	Displacement
0	0 to 1mm
1	1.1mm to 2mm
2	2.1mm to 4 mm
3	4.1mm to 8mm
4	greater than 8mm
5	impacted teeth

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2. Left and Right Buccal Occlusion

Left and right buccal occlusion concerns the fit of the teeth recorded in three planes of space. With the teeth in occlusion, the recording zone is from the canine to the last molar, either first, second, or third. Sum the antero-posterior, vertical, and transverse for each buccal segment. Exclude transitional stages and submerging deciduous teeth.

Antero-Posterior Score	Vertical Score	Transverse Score
0 Good interdigitation, Class I, II, or III	0 No open bite	0 No crossbite
1 Less than half unit from full interdigitation	1 Lateral open bite on at least two teeth (not partial eruption)	1 Crossbite tendency
2 Half a unit (cusp to cusp)		2 Single tooth crossbite
		3 More than one tooth in crossbite
		4 More than one tooth in scissor bite

3. Overjet

Record positive overjet and anterior crossbite for all incisor teeth. Record the most prominent incisor. Record canine crossbites in overjet assessment.

Overjet Score	Anterior Crossbite Score
0 0 to 3mm	0 No crossbite
1 3.1 to 5mm	1 One or more teeth edge to edge
2 5.1 to 7mm	2 One single tooth in crossbite
3 7.1 to 9mm	3 Two teeth crossbite
4 over 9mm	4 More than two teeth in crossbite

4. Overbite and Open Bite

Record the greatest overlap or open bite of any of the incisors.

Open Bite Score	Overbite Score
0 No open bite	0 Less than or equal to one third coverage of the lower incisor
1 Open bite less than or equal to 1mm	1 Greater than 1/3 but less than 2/3 coverage of the lower incisor
2 Open bite 1.1 to 2mm	2 Greater than 2/3 coverage of the lower incisor
3 Open bite 2.1 to 3mm	3 Greater than or equal to full tooth coverage
4 Open bite greater than or equal to 4 mm	

5. Centerline Assessment

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Record the difference between upper and lower midline in relation to the lower midline.

Centerline	
Score	
0	Coincident and up to ¼ lower incisor width
1	¼ to ½ lower incisor width
2	Greater than ½ lower incisor width

C. Additional Clinical Information

1. General

- All scoring is cumulative.
- There is no maximum cutoff level.
- Do not record increased overjet or contact point displacements associated with poor restorative work.
- Do not record contact points between deciduous teeth and between deciduous and permanent teeth.
- Do not record spaces** if the patient is to receive prosthesis.

2. Canines

Record ectopic canines that have erupted into the palate as anterior crossbite in the overjet section.

3. Impactions

If a tooth is unerupted due to insufficient space or is ectopic, record it as impacted.

4. Incisors

- Record anterior spacing from extraction, agenesis, or avulsion of incisors or canines as follows:
 - If orthodontic space closure is appropriate, record the space.
 - If increasing the space for prosthesis, record if space is less than or equal to 4mm.
- Estimate the lower midline when lower incisor is missing or extracted.

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D. Weightings

Various degrees of importance have been attached to the five major components of the PAR Index. Multiply the individual scores for each PAR-Index component by the weightings in the following chart and then total them to establish the weighted score.

Components	Weightings
1. Upper and lower anterior segments	x1
2. Left and right buccal occlusions	x1
3. Overjet	x6
4. Overbite	x2
5. Centerline	x4

E. Exceptional Cases

Part II of the Orthodontics Prior Authorization Form (DEN-002) is available to record information regarding exceptional cases where the PAR Index score does not reflect the overall severity of the patient's condition due to the presence of other severe deviations. In such cases, if the severe deviations are left untreated, irreversible damage to the teeth and underlying structures would occur. Examples of such deviations include the presence of clefts and facial asymmetry.

F. Recordkeeping

A copy of the PAR Index Recording Form must be kept in the patient's dental record.

G. Dental Models

The PAR Index is usually utilized in conjunction with dental models. The Division is not requiring models at this time. The cooperation of orthodontists in submitting high quality photographic prints is paramount to ensure that use of the PAR Index is effective and that models remain unnecessary. Models will only be requested when there is a significant disparity between a provider's recorded score and that of the Division's consultant.

H. PAR Index Ruler

The PAR Index Ruler, an aid for taking PAR Index measurements, can be ordered for a small fee from:

ORTHO-CARE (UK) Limited
3 Oxford Place
Bradford, West Yorkshire BD3 0EF
England
Telephone: #44 (0) 274-392017
Fax: #44 (0) 274-734446

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II. GUIDELINES FOR PHOTOGRAPHIC PRINTS

A. Photographic Prints

Orthodontists must submit photographic prints rather than slides. Slides do not provide the clarity required to review PAR-Index measurements.

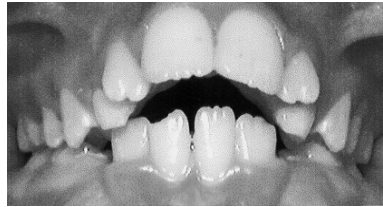
1. The photographic prints must be exposed with the patient's face clearly discernible.
2. Mount photographic prints in clear plastic mounts, indicating the provider and patient names and the date on the photographic prints.
3. Dental auxiliaries who take photographs must review these guidelines.

B. Lateral Views

Lateral views must be taken with sufficient soft tissue retraction to expose the buccal dentition. The use of pedodontic-size lip retractors facilitates sufficient soft tissue retraction. The antero-posterior relationship must be evaluated from photographs. **The lateral view should be taken as close to ninety degrees to the plane of the buccal dentition as possible.** If necessary, use a mirror.

C. Occlusal Views

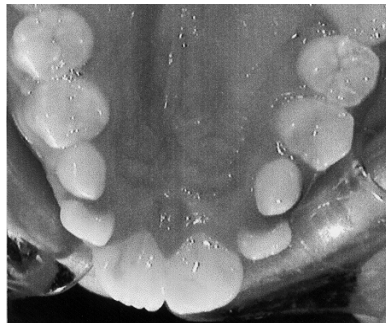
Occlusal views must be taken with a mirror. Retract so that the soft tissue of the lower lip does not cover the lower incisors. Try to include as many teeth as possible. Division staff will make contact point measurements on the photographic prints. **Be sure to measure the clinical widths of the maxillary and mandibular right central incisors, and enter the measurements on the PAR Index Recording Form.**



Right Buccal
Occlusion AP 0
Transverse 0
Vertical 0

Overjet/Anterior
Crossbite >9mm = 4
Overbite/
Open Bite Open 3mm
Centerline 1/4 to 1/2 = 1

Left Buccal
Occlusion AP 0
Transverse 0
Vertical 0



L **R**

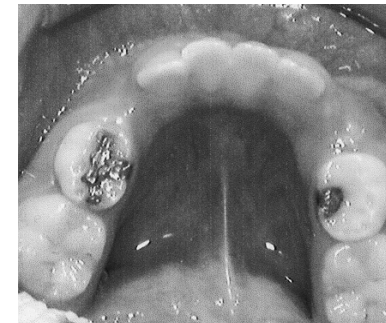
Upper Anterior Segment

R (3-2) 0 (2-1) 2 (1-1) 0

L (1-2) 2 (2-3) 0

EXAMPLE 1

PAR Components		Before Treatment			Total	
Upper Anterior Segment	R	(3-2) <u>0</u>	(2-1) <u>2</u>	(1-1) <u>0</u>	UW	W
	L	(1-2) <u>2</u>	(2-3) <u>0</u>		<u>4</u>	x1 <u>4</u>
Lower Anterior Segment	R	(3-2) <u>5</u>	(2-1) <u>1</u>	(1-1) <u>0</u>		
	L	(1-2) <u>0</u>	(2-3) <u>5</u>		<u>11</u>	x1 <u>11</u>
Right Buccal Occlusion	AP	<u>1</u>				
Transverse		<u>0</u>				
Vertical		<u>0</u>			<u>0</u>	x1 <u>0</u>
Left Buccal Occlusion	AP	<u>1</u>				
Transverse		<u>0</u>				
Vertical		<u>0</u>			<u>0</u>	x1 <u>0</u>
Overjet/Anterior Crossbite		<u>>9mm = 4</u>			<u>4</u>	x6 <u>24</u>
Overbite/Open Bite		<u>Open 3mm</u>			<u>3</u>	x2 <u>6</u>
Centerline		<u>¼ to ½ = 1</u>			<u>1</u>	x4 <u>4</u>
					Totals:	<u>23</u> <u>49</u>



R **L**

Lower Anterior Segment

R (3-2) 5 (2-1) 1 (1-1) 0

L (1-2) 0 (2-3) 5

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Right Buccal
Occlusion AP 2
Transverse Xbite tend = 1
Vertical 0

Overjet/Anterior
Crossbite 4mm = 1
Overbite/
Open Bite 0
Centerline 0 < 1/4

Left Buccal
Occlusion AP 1
Transverse 1 T Xbite = 2
Vertical 0



L **R**

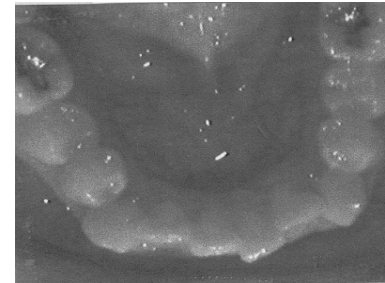
Upper Anterior Segment

R (3-2) 5 (2-1) 1 (1-1) 0

L (1-2) 1 (2-3) 2

EXAMPLE 2

PAR Components		Before Treatment			Total	
Upper Anterior Segment	R	(3-2) <u>5</u>	(2-1) <u>1</u>	(1-1) <u>0</u>	UW	W
	L	(1-2) <u>1</u>	(2-3) <u>2</u>		<u>2</u> x1	<u>2</u>
Lower Anterior Segment	R	(3-2) <u>3</u>	(2-1) <u>1</u>	(1-1) <u>2</u>		
	L	(1-2) <u>2</u>	(2-3) <u>3</u>		<u>11</u> x1	<u>11</u>
Right Buccal Occlusion	AP	<u>2</u>				
	Transverse	<u>Xbite tend = 1</u>				
	Vertical	<u>0</u>			<u>3</u> x1	<u>3</u>
Left Buccal Occlusion	AP	<u>1</u>				
	Transverse	<u>1 T Xbite = 2</u>				
	Vertical	<u>0</u>			<u>3</u> x1	<u>3</u>
Overjet/Anterior Crossbite		<u>4mm = 1</u>			<u>1</u> x6	<u>6</u>
Overbite/Open Bite		<u>0</u>			<u>0</u> x2	<u>0</u>
Centerline		<u>0 < 1/4</u>			<u>0</u> x4	<u>0</u>
Totals:					<u>27</u>	<u>32</u>



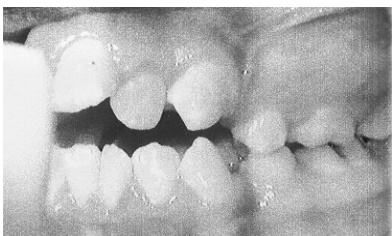
L **R**

Lower Anterior Segment

R (3-2) 3 (2-1) 1 (1-1) 2

L (1-2) 2 (2-3) 3

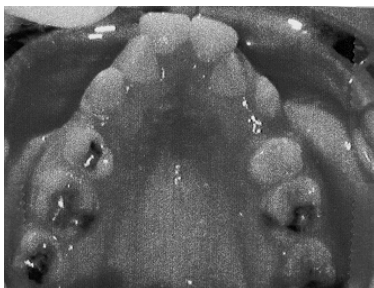
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Right Buccal
Occlusion AP 1
Transverse 0
Vertical 0

Overjet/Anterior
Crossbite >9mm = 4
Overbite/
Open Bite >4mm = 4
Centerline 0

Left Buccal
Occlusion AP 1
Transverse 0
Vertical 0



L

R

Upper Anterior Segment

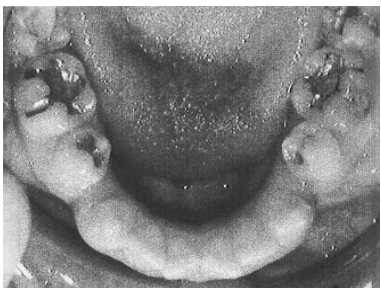
R (3-2) 2 (2-1) 1 (1-1) 0

L (1-2) 1 (2-3) 1

EXAMPLE 3

(Bicusps previously extracted)

PAR Components		Before Treatment			Total	
Upper Anterior Segment	R	(3-2) <u>2</u>	(2-1) <u>1</u>	(1-1) <u>1</u>	UW	W
	L	(1-2) <u>1</u>	(2-3) <u>1</u>		5	x1 5
Lower Anterior Segment	R	(3-2) <u>1</u>	(2-1) <u>1</u>	(1-1) <u>0</u>		
	L	(1-2) <u>1</u>	(2-3) <u>0</u>		3	x1 3
Right Buccal Occlusion	AP	<u>1</u>				
	Transverse	<u>0</u>				
	Vertical	<u>0</u>			1	x1 1
Left Buccal Occlusion	AP	<u>1</u>				
	Transverse	<u>0</u>				
	Vertical	<u>0</u>			1	x1 1
Overjet/Anterior Crossbite		<u>>9mm = 4</u>			4	x6 24
Overbite/Open Bite		<u>>4mm = 4</u>			4	x2 8
Centerline		<u>0</u>			0	x4 0
Totals:					18	42



L

R

Lower Anterior Segment

R (3-2) 1 (2-1) 1 (1-1) 0

L (1-2) 1 (2-3) 0

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